IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

MARSHALL DIVISION

SENSORMATIC ELECTRONICS CORP.	§	
Vs.	§	CIVIL ACTION NO. 2:04-CV-167
WG SECURITY PRODUCTS, INC., ET AL.	§	

MEMORANDUM OPINION AND ORDER

The court issues this order to resolve the parties' various claim construction disputes.

1. Introduction.

The plaintiff Sensormatic Electronics Corp., asserts various claims of three United States Patents against the defendants, WG Security Products, Inc., and EAS Sensorsense, Inc. The patents relate to electronic article surveillance ("EAS") tags and systems. EAS systems are used by retailers to inhibit shoplifting. The parties have filed briefs, and the court held a claim construction hearing. In this opinion, the court will provide an overview of the technology, a discussion of legal principles related to claim construction, and a decision with respect to the disputed terms from the three patents.

2. Overview of the Technology.

United States Patent No. 5,426,419 (the "'419 patent") describes a security tag having an arcuate channel. According to the patent, the tag body defines an arcuate channel and contains an electronic sensor, designed to activate an alarm if the tag is removed from the store. The retailer inserts a pin into the tag body through a piece of merchandise, such as an article of clothing. A

spring clamp grips the pin and affixes the tag to the clothing such that the removal of the tag is inhibited. Removal of the tag is accomplished by inserting an arcuate probe into the arcuate channel. The probe engages the spring clamp release mechanism and releases the pin from the grip of the clamp. The retailer is then able to remove the pin from both the tag and the clothing, and the purchaser may leave the store without activating the alarm.

United States Patent No. 6,118,378 (the "'378 patent") is entitled "Pulsed Magnetic EAS System Incorporating Single Antenna with Independent Phasing." The patent describes an EAS system comprising an antenna having first and second antenna loops and first and second transceiver circuits for generating magnetic fields and for receiving signals from within an interrogation zone. The transceivers generate magnetic fields substantially in phase and substantially out of phase with one another. The transceiver circuitry also detects a "characteristic response" from a tag or marker passing through the interrogation zone created by the magnetic fields. When a response is detected, the system verifies that it is from a tag or marker and, if so, emits an alarm.

United States Patent No. 6,700,490 (the "'490 patent") describes filters used in conjunction with EAS systems to isolate and detect signals from EAS tags. The patent is entitled "Digital Detection Filters for Electronic Article Surveillance." The patent describes techniques for filtering interference emitted by other electronic devices passing through or near the EAS interrogation zone. At issue in the '490 patent is the implementation of a technique known as a "quadrature-matched filter."

3. Claim Construction Principles.

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." *Burke, Inc. v.*

Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996).

To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. Under the patent law, the specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. A patent's claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee's claims. Otherwise, there would be no need for claims. *SRI Int'l v. Matsushita Elec. Corp*., 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). And, although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

This court's claim construction decision must be informed by the Federal Circuit's recent decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005)(en banc). In *Phillips*, the

court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the *claims* of a patent define the invention to which the patentee is entitled the right to exclude." *Id*. at 1312 (emphasis added)(*quoting Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e. as of the effective filing date of the patent application." *Id.* This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention. The patent is addressed to and intended to be read by others skilled in the particular art. *Id.*

The primacy of claim terms notwithstanding, *Phillips* made clear that "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of "a fully integrated written instrument." *Id.* at 1315 (*quoting Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314-17. As the Supreme Court stated long ago, "in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims." *Bates v. Coe*, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

> Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. The prosecution history helps to demonstrate how the inventor and the PTO understood the patent. *Phillips*, 415 F.3d at 1317. Because the file history, however, "represents an ongoing negotiation between the PTO and the applicant," it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence. That evidence is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims.

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes. *Id*. at 1319-24. The approach suggested by *Texas Digital*–the assignment of a limited role to the specification–was rejected as inconsistent with decisions holding the specification to be the best guide to the meaning of a disputed term. *Id.* According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of "focus[ing] the inquiry on the abstract meaning of words rather

than on the meaning of the claim terms within the context of the patent." *Id*. at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id*. What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id.* The definitions found in dictionaries, however, often flow from the editors' objective of assembling all of the possible definitions for a word. *Id.*

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id*. at 1323-25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant. The court now turns to a discussion of the claim construction disputes.

4. Disputed Terms.

A. The '419 patent.

The '419 patent claims a security tag with an arcuate channel. Claim 1 of the '419 patent is an illustrative independent claim which covers an EAS tag. Claim 1 provides:

> **1.** An EAS tag comprising:
>
> a tag body;
>
> means for attaching said body to an article, said attaching means having a part which is received in said tag body;

> means within said tag body for releasably preventing said part of said attaching means from being withdrawn from said tag body;
>
> means within said tag body defining an arcurate channel leading from the exterior of said tag body to said preventing means, said arcuate channel being adapted to receive and guide an arcurate probe to said preventing means for releasing said preventing means from preventing said part of said attaching means from being withdrawn from said tag body;
>
> and an [sic] detectable EAS sensor.

1. Means within said tag body for releasably preventing said part of said attaching means from being withdrawn.

The first disputed term is drafted according to 35 U.S.C. § 112 ¶ 6. The claimed function is "releasably preventing said part of said attaching means from being withdrawn." The corresponding structure is the spring clamp.[1] *See* '419 patent, col. 5, ll. 29-32 ("Means 6 to be discussed in greater detail below is provide [sic] within the tag body 1A for releasably preventing the tack body from being withdrawn from the tag body."); '419 patent, col. 6, ll. 41-42 ("As shown, the means 6 is in the form of a spring clamp having a clamp body 14 and jaws 15 and 16.").

2. Means within said tag body defining an arcurate channel.

The dispute concerning this term is whether it is drafted in means plus function form. Although the language of the claim limitation uses the word "means," it does not do so in the context of identifying structure for performing a function. As such, the court holds that this limitation is not drafted according to 35 U.S.C. § 112 ¶ 6. *See Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 530-31 (Fed. Cir. 1996). The court construes the term to mean "structure within the tag body defining an arcurate channel."

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[1] Pursuant to the statute, the literal scope of the claim limitation covers the structure disclosed in the specification and equivalents. 35 U.S.C. § 112 ¶ 6.

3. Arcuate channel.

The court has carefully reviewed the briefs and the arguments and adopts the construction of this term determined by the court in *Universal Surveillance Sys., Inc. v. Sensormatic Elecs.*, 02-80598-CV-Middlebrooks (S.D. Fl. 2002). The court defines "arcuate channel" to mean "a curved path or channel."

4. Arcuate probe.

The court defines this term to mean "a curved probe."

5. Means within the tag body for releasably receiving and clutching the tack body.

This term is drafted according to 35 U.S.C. § 112 ¶ 6. The function recited by this term is "releasably receiving and clutching the tack body." The jaws 15 and 16 of the spring clamp constitute the corresponding structure. '419 patent, col. 6, ll. 41-42; col. 7, ll. 20-30; Figs 6A, 6B.

6. Release part which is adapted to be engaged by said arcuate probe to cause said receiving and clutching means to release clutching said tack body.

The plaintiff contends this term means "a structure capable of being engaged by the arcuate probe to cause the 'receiving and clutching means' to release a tack-like structure." The defendants contend that this term means "a portion of the body of the spring clamp, extending laterally from the jaws of the spring clamp, and which is configured to be engaged with at least one of the two legs of the L-shaped end of the arcuate probe which pushes on said release part causing said release part to flex, releasing said clutching means by opening the jaws of the spring clamp." The defendants' definition incorporates too many limitations from the preferred embodiment. *Tex. Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 805 F.2d 1558, 1563 (Fed. Cir. 1986)("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.").

The court construes this term to mean "a structure capable of being engaged by the arcuate probe to cause the 'receiving and clutching means' to release a tack-like structure."

7. Further means within said tag body defining a further channel adjacent to and outward of said arcurate channel.

The parties dispute whether this term, appearing in claim 5, is drafted according to 35 U.S.C. § 112 ¶ 6. Although the limitation recites the word "means," the court holds that the limitation does not use the word as a shorthand reference for structure performing a function. As such, this limitation is not a means-plus-function clause. The court defines this term as "a structure formed within the tag body that creates a further path or channel close to and outside of said arcurate channel."

8. Mounting means.

This term appears in claim 10 of the '419 patent. In pertinent part, claim 10 requires "an EAS tag in accordance with claim 7, further comprising: *a mounting means* attached to an inner surface of said further wall of said second elongated housing *for mounting* said receiving and clutching means such that said receiving and clutching means receives said tack body passing into said first opening and through said further wall of said first elongated housing . . . ." (emphasis added). The court agrees with the defendants that this term is drafted according to 35 U.S.C. § 112 ¶ 6. The recited function is "mounting said receiving and clutching means." The corresponding structure is the hollow circular mount 21 with a lip 21A and support walls 22, 23, and 24 as disclosed in Figs. 2, 3, 6A, and 6B. '419 patent, col. 6, ll. 64-67.

9. configured to be received in and guided by said arcurate channel of said tag body.

This phrase appears in claim 44 of the '419 patent and describes the arcuate probe. The court

has reviewed the briefs and the arguments of counsel and concludes that the plaintiff's construction is correct. The court construes this phrase to mean "shaped, fashioned or constructed to be to be received in and guided by the 'arcuate channel.'"

B. '378 patent

Claim 1 is an illustrative independent claim. It provides:

> **1**. An electronic article surveillance system, comprising:
>
> an antenna having first and second antenna loops;
>
> first and second transceiver circuits coupled to said first and second antenna loops respectively, for respectively generating in a first mode of operation first and second magnetic fields together defining an interrogation zone for a marker generating a characteristic response to said magnetic fields in said interrogation zone, and for receiving signals from said interrogation zone in a second mode of operation;
>
> said first and second transceiver circuits, when transmitting, alternately generating said first and second magnetic fields substantially in phase with one another and substantially out of phase with one another; and,
>
> a detector for evaluating an output signal, representative of said signals received by said first and second transceiver circuits from said interrogation zone, for said characteristic response of said marker.

The '378 patent describes an EAS system which uses transceiver technology to generate magnetic fields, defining an interrogation zone, that are in phase and out of phase with each other. At the outset, the court is of the opinion that most of the defendants' constructions improperly import limitations from the preferred embodiment. As a result, the court has rejected those constructions and has adopted constructions closer to those proposed by the plaintiff.

There is one primary exception. The plaintiff has urged in briefs and in argument that the two magnetic fields which are "in phase" and "out of phase" with one another are the Figure O emulation generated by the aiding configuration of the two antenna loops and the Figure 8 emulation

generated by the opposing configuration of the two loops. *Compare* '378 patent, Figs. 1 and 2. By contrast, the defendants have urged that the two magnetic fields which are in phase or out of phase with one another are the smaller fields generated by the two antenna loops. Read in light of the specification, the defendants' construction of this claim language is correct. Bearing these holdings in mind, the court will now address the specific terms in dispute.

1. Antenna having first and second antenna loops.

The parties first dispute the construction of the term "antenna having first and second antenna loops." The plaintiff urges that the term "antenna" means "a device used for radiating or receiving radio waves." The defendants contend that the phrase as a whole means "a single antenna which features two separate and identical rounded rectangle loops, substantially lying in a common plane and partially overlapping along a common rectangular axis, wherein currents flow simultaneously in both loops." The defendants' definition needlessly imports limitations from the preferred embodiment into the claims, and the court rejects it. The court defines the term "antenna having first and second antenna loops" as "a device used for radiating or receiving electromagnetic energy which has first and second antenna loops."

2. Transceiver.

The court defines "transceiver" as a device which performs both transmitting and receiving functions. As a general matter, the defendant's expert essentially agreed with this definition, and the court is not persuaded that the language of the patent evidences an intent to limit the claim language to the disclosed embodiment.

3. First and second transceiver circuits.

The court defines "first and second transceiver circuits" as two "transceivers." Again, the

court rejects the defendants' efforts to limit the claims to the preferred embodiment.

4. First mode of operation/second mode of operation.

As used in claim 1, the term "first mode of operation" refers to the "transmitting mode of operation." The balance of the claim language makes this clear. The claim language also makes clear that the second mode of operation is the "receiving mode of operation." The court rejects the defendants' attempt to import additional limitations into this term.

5. First and second magnetic fields.

The patent describes a transmitting mode, in which two magnetic fields are generated to comprise an interrogation zone. The patent explains that the "first and second magnetic fields" refer to the two magnetic fields generated by the respective loops of the antenna. In particular, the patent discloses that when the fields generated by the two loops are in phase with one another the composite effect is that of a Figure O configuration. '378 patent, col. 6, ll. 2-4 ("Accordingly, the respective fields generated by currents 26 and 30 mostly cancel out one another. The overall effect is that of a single, large rectangular loop."). Likewise, when the respective magnetic fields generated by the loops are out of phase with one another, the configuration has the overall effect of a Figure 8. '378 patent, col. 6, ll. 40-44 ("In the opposing configuration, the current flowing in the lower coil is in the opposite direction from that in the upper coil. The *fields* produced by the *coils* are in opposite directions . . . . ")(emphasis added). This is shown in Figures 1 and 2 of the patent and explained by the corresponding portions of the specification.

The plaintiff contends that the terms first and second magnetic fields means "two magnetic fields." The defendants contend the term means "two magnetic fields simultaneously generated by the first and second antenna loops." After considering the parties' arguments, in light of the claim

language and the specification, the court construes this term as "two magnetic fields generated by the first and second antenna loops." The two fields generated by the two loops do not necessarily need to be generated "simultaneously," but they must, according to other language in the claim "together define an interrogation zone."

6. Substantially in phase with one another.

The pertinent language of claims 1, 14, and 17 requires "alternately generating said first and second magnetic fields substantially in phase with one another and substantially out of phase with one another." The plaintiff contends this term means "substantially oriented in the same direction." The defendants contend that this term means "the magnetic fields are generated by equal currents flowing simultaneously in the same direction in each loop, i.e., both clockwise or both counterclockwise." After considering the parties' arguments, the court holds that the defendants' construction imports too many limitations from the preferred embodiment. The court adopts the plaintiff's construction and construes this term to mean "substantially oriented in the same direction."

7. Substantially out of phase with each other.

For essentially the same reasons set forth in the prior term, the court construes this term to mean "substantially oriented in opposite directions." The court observes that the plaintiff's proposed construction seeks to define this term as "substantially oriented in *different* directions." However, the court concludes that the term "out of phase," as explained in the specification, refers to the situation in which the fields are in opposite directions. *See, e.g.*, '378 patent, col. 6, ll. 40-42 ("In the opposing configuration, the current flowing in the lower coil is in the opposite direction from that in the upper coil. The fields produced by the coils are in opposite directions . . . .").

8. Common plane and partially overlap.

Certain claims of the '378 patent require that the "first and second antenna loops substantially lie in a common plane and partially overlap." *See* '378 patent, claims 2, 9, 20, 21. The plaintiff has not proposed a construction for this term. Although the defendants contended in their brief that this term means "the loops are substantially coplanar and are positioned along their common axis such that approximately eleven percent of the areas bounded by and within each loop overlap," they did not advance any argument in support of this term at the argument. The court is not persuaded that this term requires construction and, in any event, rejects the limitations proposed by the defendants in their brief.

9. Alternating generation of said magnetic field phases.

The plaintiff contends that this term means "generating the first and second magnetic fields in successive turns." The defendants contend that this term means "the current in one antenna loop alternating between flowing in the same direction and flowing in the opposite direction relative to the current flowing simultaneously in the other antenna loop." Read in light of the specification, the defendants' construction is closer to correct. The court construes this term to mean "the current in one antenna loop alternating between flowing in the same direction and flowing in the opposite direction relative to the current flowing in the other antenna loop." The patent explains that it is the magnetic fields generated by the two antenna loops which alternate between being in phase and out of phase with one another. *See* '378 patent, col. 8, ll. 16-21 ("The fields generated by the respective loops have either substantially a 0º phase difference, as shown in FIG. 1, or substantially a 180º phase difference, as shown in FIG. 2. In this mode of operation, one of the antenna loops becomes a reference loop, or reference coil, with respect to the other loop, or coil.").

10. Phase relationship of said fields

Claim 6 depends from claim 1 and requires that "said controller establishes said alternate generation of said magnetic field phases when said characteristic response is not sensed and stops said alternating generation when said characteristic response is first sensed, whereby said phase relationship of said fields in which said marker is first sensed is maintained until said characteristic response is confirmed or not established." '378 patent, claim 6. The specification explains that when a characteristic response signal is detected, the controller stops generating the alternating magnetic field phases until the system validates the response, at which time an alarm sounds. If the validation sequence fails, and the system concludes that the response signal detected is not from marker, the transmitters return to an alternating mode. *See* '378 patent, col. 8, ll. 52-61 ("System software in the microprocessor 100 can control the relative transmitter phasing in such a way as to alternate between aiding, or in phase, and opposing, or out-of-phase relative phase conditions of the transceiver circuits 92 and 94 until such time that a magnetic marker response is first sensed. *Upon such first sensing, the phase relationship is held fixed until such time as a validation sequence is either successfully completed and an alarm generated, or the sequence fails, after which the transmitters return to alternating mode*.") (emphasis added). The term "phase relationship of said fields" refers to "whether the two fields are in phase or out of phase."

C. '490 patent.

The parties have only one remaining dispute concerning the '490 patent. The dispute is whether claims 1 and 12 require a *plurality* of filter pairs, or whether those claims require only a single filter pair. The parties agree that the term filter *bank* requires a plurality of filter *pairs*. The plaintiff contends that claim 1 covers a single filter pair, and dependent claim 2 covers a plurality

of filter pairs, or a filter bank. The plaintiff relies on the language of the first limitation of claim 1, which recites "*a* detection filter *pair* . . ." '490 patent, claim 1. The defendants contend that the claims are limited to embodiments which include a filter bank, and that the claims do not cover a device which contains only a single filter pair. The defendants point to the preamble, which reads "a digital detector implemented as a quadrature matched filter *bank* . . ." (emphasis added) together with the language of the third limitation of claim 1, which recites "a means for summing the squared outputs of each of *said* filter *pairs* to provide a test statistic for detection of the tag signal." The defendants seize on the language "said filter pairs" and urge that the antecedent basis for the filter pairs must be the preamble's reference to the term "bank." Alternatively, the defendants contend that the "said filter pairs" language, standing on its own, suggests a plurality of filter pairs.

The defendants' argument is not without force, and the language of claim 1 is not a model of clarity. Nonetheless, this court must construe the claim as one of ordinary skill in the art would, after consulting the specification. After considering the parties' positions, the court is persuaded that the plaintiff's construction is correct. Claim 1 requires only a single pair of digital detection filters, while claim 2 requires a "plurality of said filter pairs . . . ." The third limitation of claim 1, which refers to the "means for summing the squared outputs of each of said filter pairs" is construed to requires a "means for summing the squared outputs of each of said *filters*." Claim 12 is construed consistently with claim 1, as set forth herein.

SIGNED this 22nd day of November, 2005.

T. John Ward

T. JOHN WARD
UNITED STATES DISTRICT JUDGE